

Kawneer

STORE FRONTS

It Stays and Pays

1912

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Kawneer
STORE FRONTS

Look for the *Patent Stamp*

KAWNEER PAT.
7-16-07. NILES, MICH.

KAWNEER MFG. CO.

Francis J. Plym, President

420-422 Turk Street
SAN FRANCISCO, CALIF.

ON all KAWNEER material will
appear one of the above patent
stamps. If you want

Kawneer Efficiency

and wish to secure Kawneer results,
insist upon materials showing the
Kawneer patent stamp.

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Kawneer

STORE FRONTS

***K**AWNEER was the first—the Original Construction by which Store Front Glass could be set directly between two metal bearing surfaces, without the assistance of putty, cork, wood or any other cushion substance.*

Every improvement made in Store Front Construction since then is a product of KAWNEER Designers and is shown on the following pages.

Copyright
1912

Kawneer Manufacturing Company
Niles, Michigan



Made by the

Kawneer Manufacturing Company

FRANCIS J. PLYM, *President*

Specialists in Store Front Construction

Branch Offices

KAWNEER MFG Co.,	-	-	-	1014-16 Unity Bldg.,	-	-	-	Chicago, Ills.
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KAWNEER MFG. Co.,	-	-	-	-	-	-	-	Portland, Ore.
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Factory and General Offices, Niles, Michigan

Kawneer

STORE FRONTS



Lincoln, Nebraska

A Word to the Technical Man

TO you the ideal Store Front Construction is one that is built around practical ideas, of material that will last, and incorporating features that will be of benefit to the Merchant as well.

When KAWNEER originated, Store Front construction was most crude and far from equal development as compared to other building materials. Up to that time apparently nobody had given this part of construction work any serious thought, leaving the old, antiquated and worn-out ideas to go on as before; and upon reflection you will readily agree that a great mistake was being made, because of the wonderful latent power of the improved Store Front — because of its value to the merchant if only exercised.

The Inventor of Kawneer Store Fronts, as a practicing Architect, came in intimate contact with the vital needs of a New-departure Construction, both from your standpoint and that of the merchant tenant. An idea occurred to him—the idea grew into reality, and by its development and growth has actually revolutionized this field. His ideas were original, and without a doubt, the ultimate success of KAWNEER was due, to a great degree, to holding firmly to this policy — Originality.

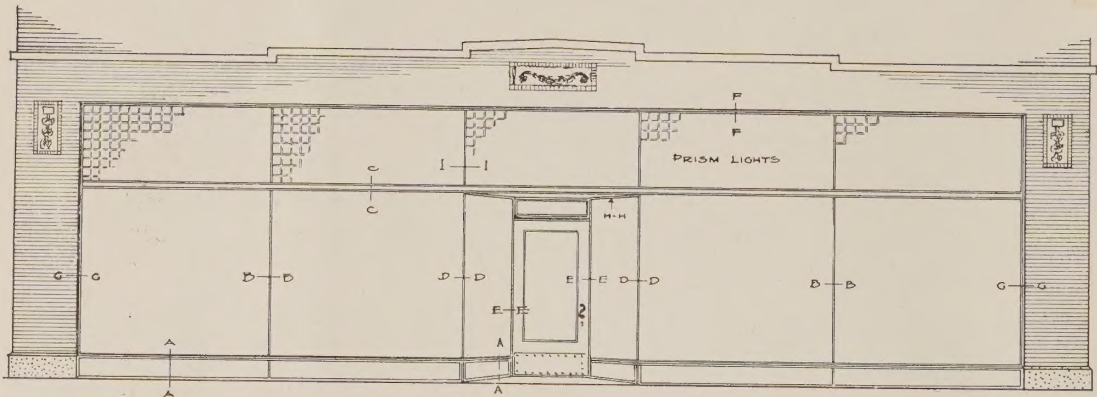
Every feature incorporated in KAWNEER is there because it is needed. There are no unnecessary parts built in to cause complication. KAWNEER is simple of construction, practical in design and can be installed by any mechanic using ordinary care.

This booklet is compiled, printed and presented for you to read and study, so that you may learn just what KAWNEER is, how it is constructed, how it is installed and what it will do after installation. Full size details are shown, wherever possible, which at a glance shows the sturdy and compact construction of each member. Also, please take particular note that KAWNEER is complete — not simply a Corner and Division Bar, but complete from side walk to I-beam.

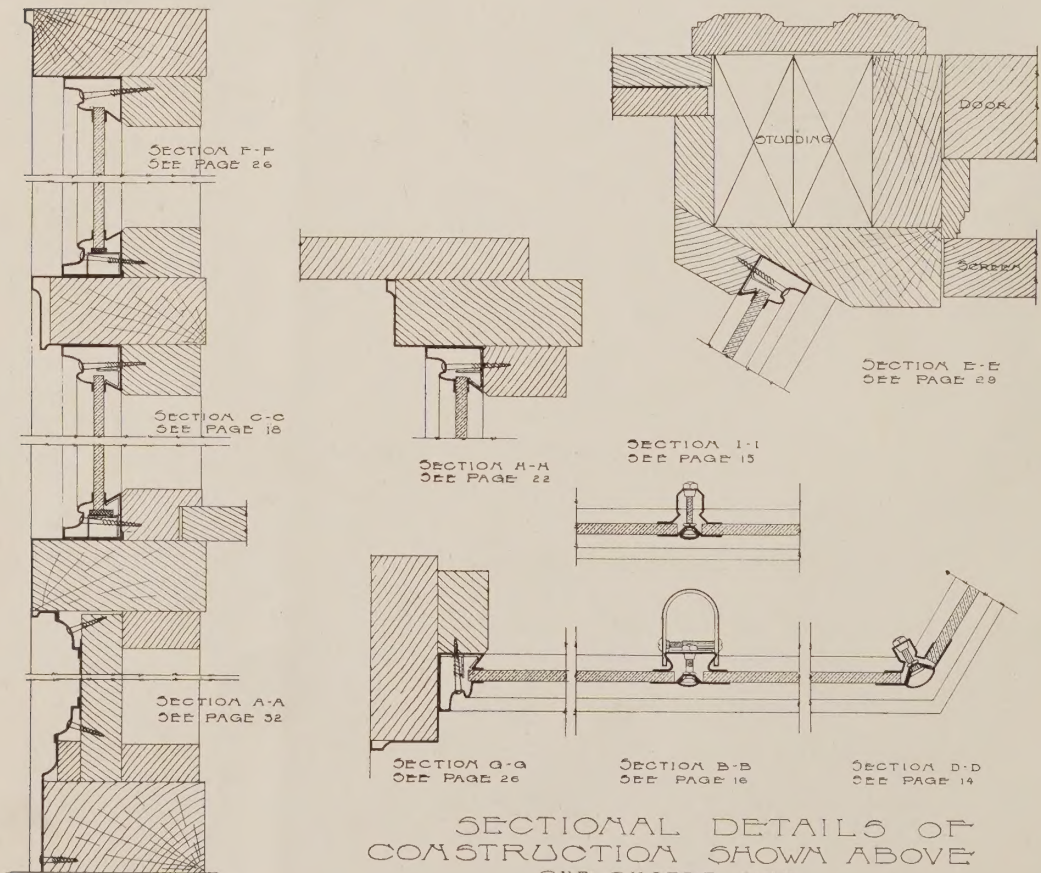
KAWNEER is not and never was an imitation — every idea has been original from its conception. The origin of almost every new feature in solid, all-metal Store Front Constructions of every kind and make can be traced directly to KAWNEER. However, we are glad to be the leaders — we are flattered by this imitation and are happy to be of such strength to withstand the piracy of other makers. We are the Originators and Pioneer Manufacturers of the solid, all-metal Store Front and sincerely believe we are in a position to serve and co-operate with you on all matters pertaining to Store Fronts. It has been our object from the beginning to produce a construction that fulfills your every requirement, however exacting it may be, and after you have studied this Booklet and learned the merits of KAWNEER, we believe we will enjoy your hearty approval.

Kawneer

STORE FRONTS



Elevation of a Modern Store Front



General Description

BY means of sectional details (full size wherever possible) and half-tone reproductions, on the following pages Kawneer Store Fronts in their various uses and adaptations are set before the Architect and Contractor—the technical men. These details are shown for a two-fold purpose. In order that by their clearness and accuracy with respect to the actual construction, the technical man may be able to study intelligently the features of Kawneer Store Fronts, features that have made them standard, par excellence, of Store Front design. Second, in order that the draftsman may be able to rapidly and with absolute accuracy detail Kawneer construction as used in various members.

Kawneer Store Fronts offer a construction which diverges from the old-time wood construction and its attending evils at every point. Such metals as are used in the Kawneer construction—copper, brass, bronze and aluminum—do not rust, rot nor is it necessary to paint or decorate them in any way. This last item represents in itself a saving, year after year, of no small amount. Because of this all-metal construction, an extremely narrow setting for the glass has been provided, and still it has more than the requisite strength. Kawneer construction provides the merchant with the greatest possible exposure of glass consistent with strength—the all-glass effect being secured at the lowest rate of insurance placed upon plate glass, regardless of the method of setting. This affects an economy of consequence, as compared to the insurance on other all-glass constructions.

Metal Sash No. 30 shown on page 8 is used as a setting for all plate and prism glass. It has been wonderfully improved by the introduction of a small angle slide, designed to open or close the vent holes in the gutter of the sash. The slide is easily operated from the inside of the window. When the vent holes are open a full and effective current of air enters through the sash, circulates along the inner surface of the glass, absorbs the moisture and goes out through the top sash. By closing the vent holes the sash is made dust-tight, thus serving as a protection to merchandise on display.

All glass is set from the outside and rests upon metal setting blocks capped with leather cushions. A spring, friction grip holds the glass firmly yet fully allows for contraction and expansion, also for inequalities in glass thickness. The yielding metal insures safety of glass.

Corner Bars Nos. 5 and 10, illustrated on pages 14 and 15, follow the same general principles as shown in the metal sash; narrow construction, spring, friction grip on glass and handsome appearance. The two bars differ only in that the No. 10 is designed for use in locations particularly exposed to heavy winds and in which extremely large plates are used.

Division Bars Nos. 14A, 21B and 21C, as shown on pages 15 and 16, follow the same design and principles of the corner bars with the addition of steel reinforcement to Nos. 21B and 21C.

For ordinary spans Transom Bar No. 26, shown on page 18, is used, but for spans of 14 feet or over (not having reinforcement, either by means of return transom bar, ceiling or columns), the steel reinforced Transom Bar No. 26 is used. See page 19.

Several designs for treatment of the bulkhead or base of the show window are shown on pages 31, 32, 33, 34 and 35. By the use of these bulkhead designs all exposed woodwork is eliminated and freedom from rotting and warping is assured.

KAWNEER represents a Store Front—not a corner bar nor a transom bar, but a complete Store Front from sidewalk to I-beam, each part designed in harmony with every other.

This harmony in design, together with the brilliant finish of the materials used in a Kawneer Front strengthens vitally each successive display placed in the window. The attractive appearance is lasting.

Improved Metal Sash No. 30

THIS metal sash forms a setting for all glass, plate and prism.

The face piece of No. 30 Metal Sash is made of No. 16 B. & S. gauge copper, brass, bronze or aluminum. There are two large vent holes in every foot of face piece.

The spring gutter is made of No. 20 B. & S. gauge metal in which $\frac{1}{4}$ " drainage and ventilation holes are punched every two inches.

No vent holes are punched in sash at sides and head of transom glass, however full drainage is provided for at bottom of transom glass.

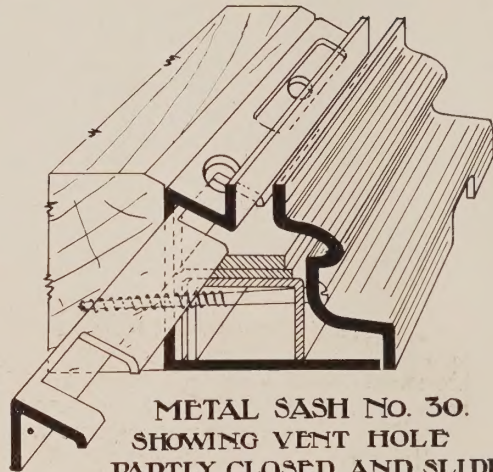
A V-shaped slide, with holes punched to correspond with those in the gutter, is built in the gutter, and is easily operated from the inside. This slide makes the Kawneer *Regulated Ventilation*, an all-important feature found only in KAWNEER STORE FRONTS.

An angle piece is placed above the wood screws to prevent their contact with the glass, thus avoiding glass breakage due to vibration.

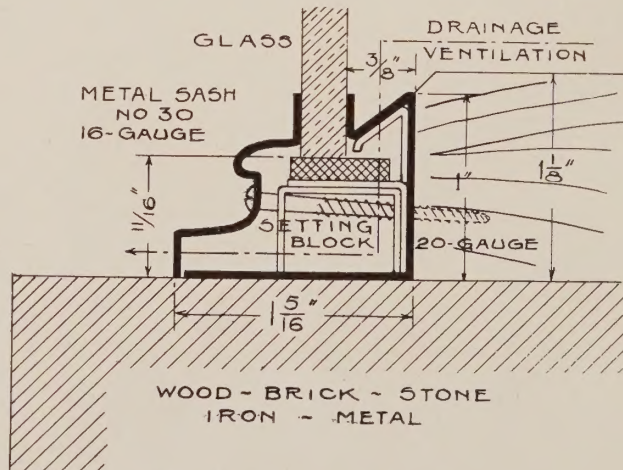
Solid bronze screws are used to fasten the face piece to the wood backing. When face piece is of brass finish, brass screws are used. Bronze oxidized screws are used for gun metal and spotted oxidized finishes.

Corner and straightway caps are provided for covering all joints and mitres of this sash. A tap, drill and $\frac{1}{2}$ " machine screws are furnished with each order, by means of which the caps are attached.

Sash No. 30 is used on all sills, side and head jambs, either directly against the brick, wood, stone or I-beam, or in conjunction with metal mouldings, as shown on page 26.



**METAL SASH NO. 30.
SHOWING VENT HOLE
PARTLY CLOSED AND SLIDE
EXTENDED. (GLASS OMITTED)**



Metal Sash No. 30. Full Size.

Regulated Ventilation and Drainage



Metal Sash No. 30

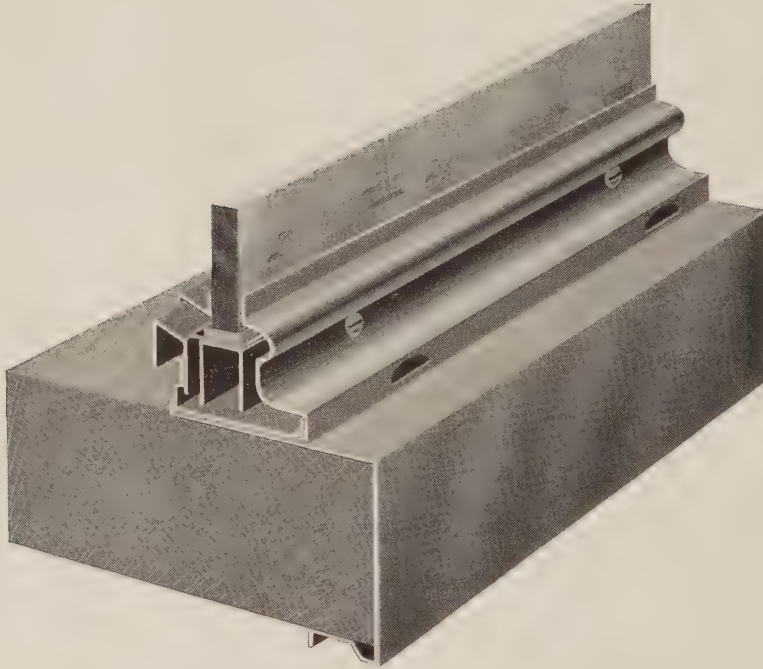
THE improvement in this sash; which, by means of a simple slide, *regulates* the ventilation of a show window; marks the greatest advancement in Store Front Construction since the origin of Kawneer Store Fronts.

A full and effective current of air can circulate across the inner surface of the glass, eliminating frost completely from the show window, while by moving a slide in the sash, operated from the inside, the entrance of air can be entirely cut off.

Aside from the question of architectural design, materials used, method of grip on glass and lasting qualities, the one point of supreme importance in Store Front Construction is the principle of ventilation and drainage and its efficiency. To have an air-tight sash, and, at will, one that perfectly ventilates and drains is something which has never before been produced.

The angle slide is also built in Sash Nos. 60 and 130 — See pages 10 and 11.

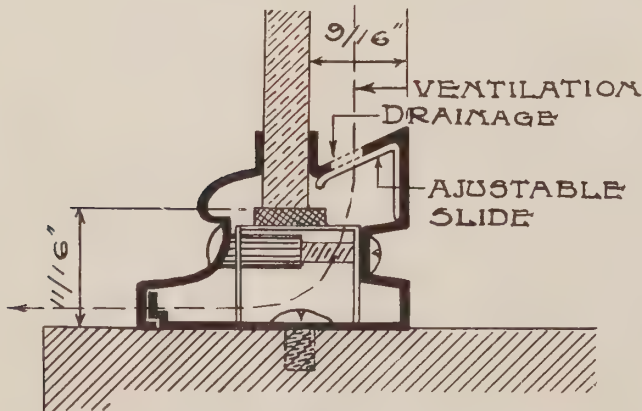
Metal Sash No. 60



Metal Sash No. 60 and No. 608 Sill Covering

METAL SASH No. 60 resembles the No. 30 sash in size, and differs in that it is self-supporting by means of screws through the base. This sash is used in case no backing of any description is desired.

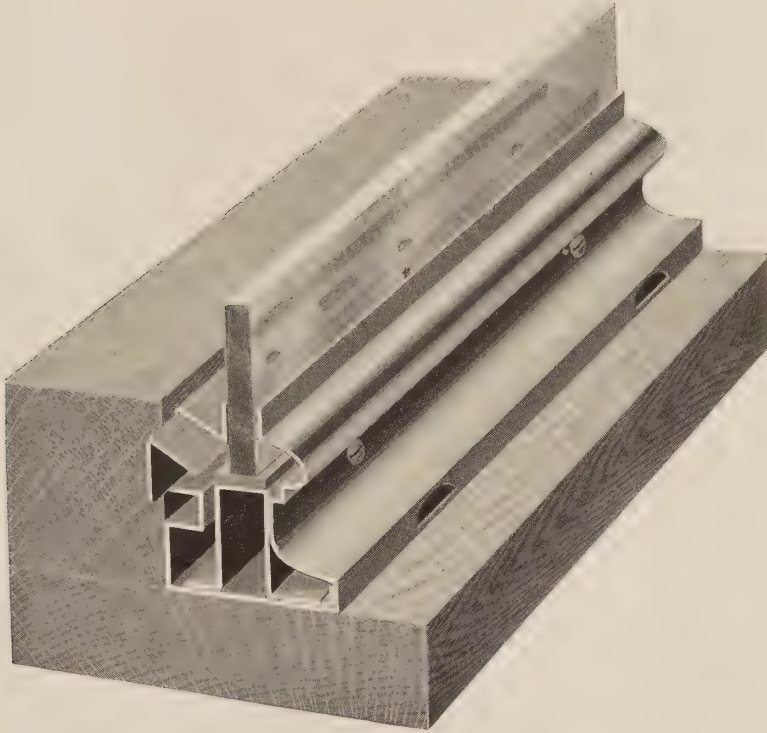
The Kawneer *Regulated* Ventilation and Drainage is provided for as in the No. 30 sash, by the angle slide built in the gutter.



Metal Sash No. 60

No. 16 B. & S. gauge metal is used for the face piece and gutter, which insures ample strength under all conditions. Like the No. 130 metal sash shown on page No. 11, machine screws are used, and drawn to the proper tension, rigidly hold the glass with ample allowance for contraction and expansion of plate.

Metal Sash No. 130

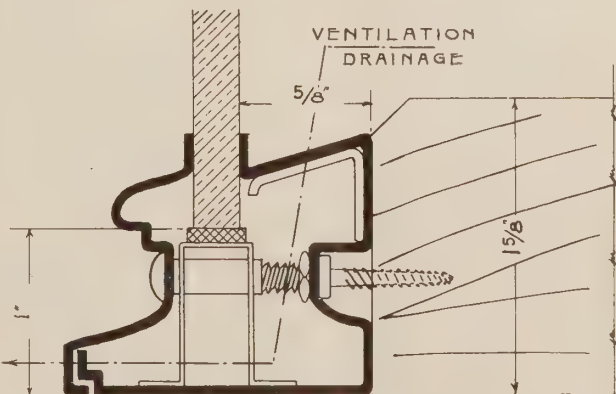


Metal Sash No. 130

SASH No. 130 is very similar to No. 30 except that it is larger and affords a greater grip on the glass. Vent holes are punched in the wide gutter and in the face piece, which properly takes care of ventilation and drainage.

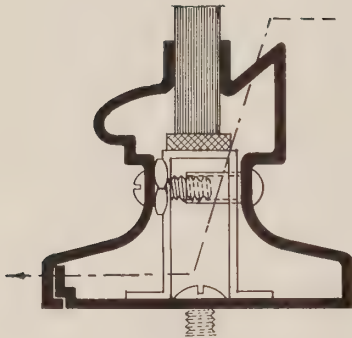
This sash is so constructed that it can be easily placed against wood or metal as a backing. Like the No. 30 metal sash, it is provided with an angle slide for the Kawneer *Regulated Ventilation and Drainage*.

The face piece of the No. 130 is of No. 16 B. & S. gauge metal and the gutter is of No. 20 B. & S. gauge. It is provided with an extra large gutter, $\frac{5}{8}$ " wide, which will take care of any excess amount of drainage that may occur.

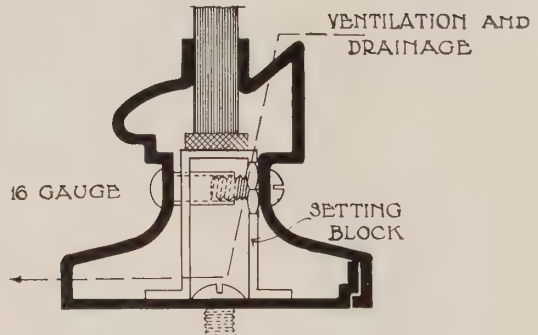


Metal Sash No.130

Metal Sash Nos. 50 and 100



METAL SASH No. 100.



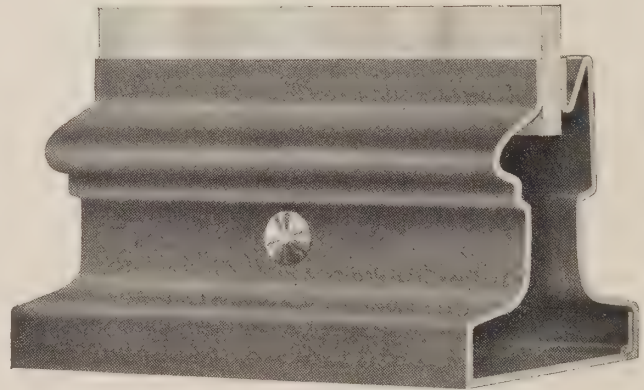
METAL SASH No. 50.

METAL Sash No. 100 is designed for use where no wood is desired back of the sash. The face piece and spring alike of this sash are drawn from 16 B. & S. gauge metal, and when fastened securely to the sill and jamb construction does not require woodwork of any nature.

Ventilation and drainage holes are punched both in the face piece and in the gutter.

A metal setting block (No. 20 B. & S. gauge) is used to support the glass, while machine screws with barrel nuts tightly hold the face piece and spring against the glass. With sash No. 100 the glass is set from the outside.

Metal Sash No. 50 is identical to Sash No. 100, except that it provides for the glass to be set from the inside. This sash is designed to adequately take care of the plate glass used in second or third story display windows.



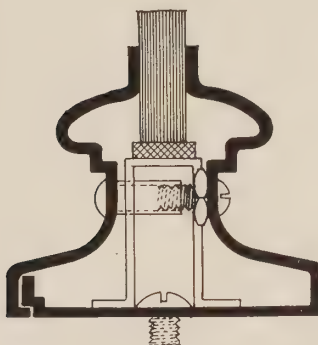
Metal Sash No. 50. Full Size

Since Sash No. 50 is for the installation of plate glass above the first story, unless specially ordered, it will not be provided with ventilation and drainage holes, such display windows being very seldom "backed" or enclosed.

Corner caps are furnished as for Sash No. 30.

Either No. 50 or No. 100 Sash can be used in connection with architectural metal mouldings exactly as detailed for the Sash No. 30.

Metal Sash No. 150



METAL SASH No. 150

THE No. 150 sash is a combination of the face pieces of sash Nos. 50 and 100, and is used as a setting for glass where no ventilation or drainage is desired. No. 16 B. & S. gauge metal is used throughout, making it a substantial and self-supporting sash by means of screws through the base.

It can be placed directly against metal, wood, marble or brick, and requires no backing, and is especially adaptable for use in store and vestibule doors.

NOTE—Mitre caps are furnished with all regular sash for horizontal and vertical joints. Vertical caps are furnished for mouldings Nos. 607 and 609.

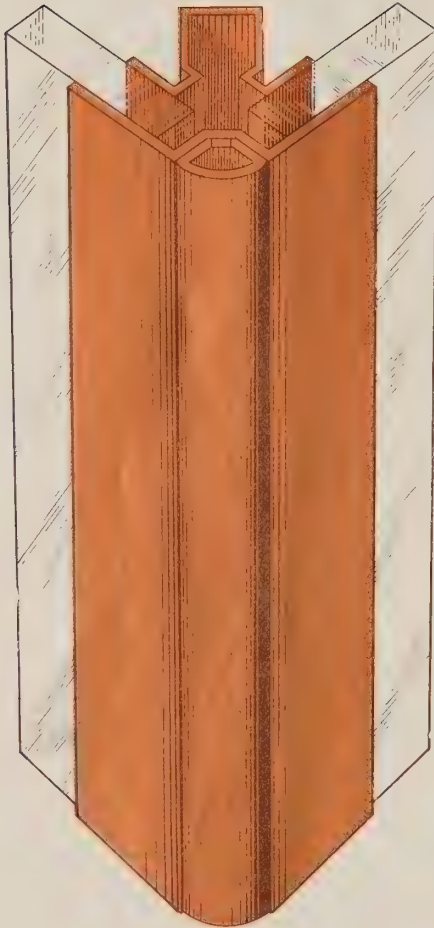
Horizontal caps are provided for mitres of sill moulding No. 608 and transom bar moulding No. 710.

Any other caps to be furnished will be charged for according to size and construction.

We manufacture many architectural metal mouldings to the particular specifications of the Architect. Such mouldings of necessity are more expensive than the regular shapes shown in this catalog. Hence, wherever possible, economy, both of time in shipment and of cost, will result if regular shapes are used.

Our engineering and drafting department is ready at any time to give information concerning the installation or use of Kawneer Store Fronts, whether the case be a special one requiring detailed drawings or an ordinary one. Estimates of Kawneer material complete for any Store Front will be sent immediately upon request for same.

Corner Bars



Corner Bar No. 5. Full Size

ON glass up to 108" x 108", Corner Bar No. 5 can be safely used and on glass over that size, a heavier type Bar should be used.

The No. 10 Bar is very similar to the No. 5 Bar, however, its heavier construction gives it greater strength and is generally used in cases where the No. 5 Bar is not considered of ample strength.

All Corner Bars are anchored at top and bottom by means of brackets which insure safety of the glass under strained conditions.

The face pieces of the No. 5 and No. 10 Corner Bars are of No. 16 B. & S. Gauge metal. The springs, (back pieces), are drawn from No. 20 B. & S. Gauge metal.

On both bars is used a square head machine screw made especially for KAWNEER bars. By means of the square head, the screws cannot turn in the head, hence rapidity of installation is gained. The barrel hexagonal nuts used on these bars give as many threads contact with the screw as does the thumb or battery nut. In addition, by means of this barrel or off-set construction, only an exceedingly small part of the nut extends beyond the surface of the spring.

Corner Bar No. 21-D

Oftentimes two plates of glass meet at a very wide angle and experience shows that a bar of greater strength than is possessed by either Corner Bars Nos. 5 or 10 is necessitated in case this angle is of 135 degrees or over.



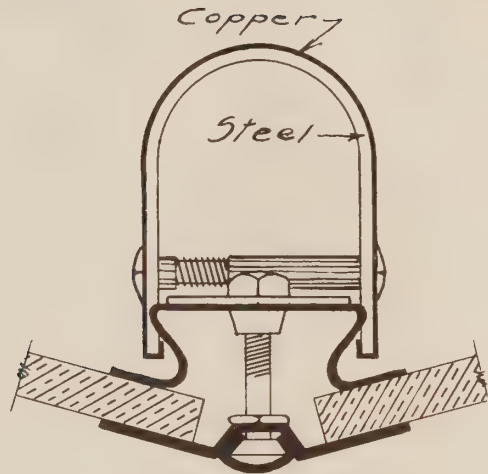
Corner Bar No. 5. Full Size Detail.

In view of this KAWNEER Corner Bar No. 21 D has been designed. It is reinforced in the same manner as the Division Bar No. 21 B and insures ample strength for a bar of this kind for any angle ranging from 135 degrees to 180 degrees — a straight angle. See page 15.

Corner Bars Nos. 5 and 10 can be safely used in angles up to 135 degrees, and of angles over that corner Bar No. 21D will be shipped.



Corner Bar No. 10. Full Size



Corner Bar No. 21D. Full Size
For use on corners of 135° or over

Division Bars

DIVISION Bars Nos. 14A, 21B and 21C are designed for use with varied sized glass. No. 14A is used for glass up to 60" in height and 108" in width.

No. 21B is used for glass up to 108" in height and 108" in width.

No. 21C is used for glass above 108" x 108".

The face pieces of these Division Bars closely follow the design of the Corner Bar, shown above. No. 16 B. & S. gauge metal is used. On Division Bars Nos. 21B and 21C, the face pieces afford a larger grip on the glass than does the No. 14A Division Bar.

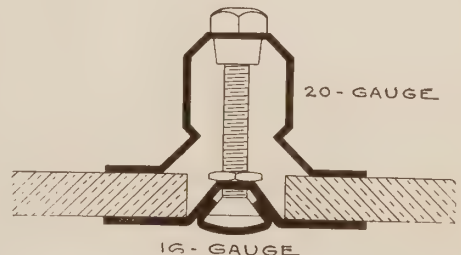
Division Bar No. 14A

The spring, (back piece), of this bar is of No. 20 B. & S. gauge metal, and, being especially designed for use in transom glass, is in every respect sufficiently strong for a glass up to 108 inches wide and 60 inches high. This does not mean, however, that the No. 14A Division Bar can be used with safety with a glass 108 inches high and 60 inches wide—don't use this bar over 60 inches long and do not attempt to hold a glass over 108 inches wide in that case use No. 21B or 21C.

Division Bar No. 21B

This bar is provided with a steel U (.094" thick) reinforcement, which is covered by .012 copper so as to prevent any corrosion, rusting or rotting. By this method of construction a uniform finish is gained both interior and exterior.

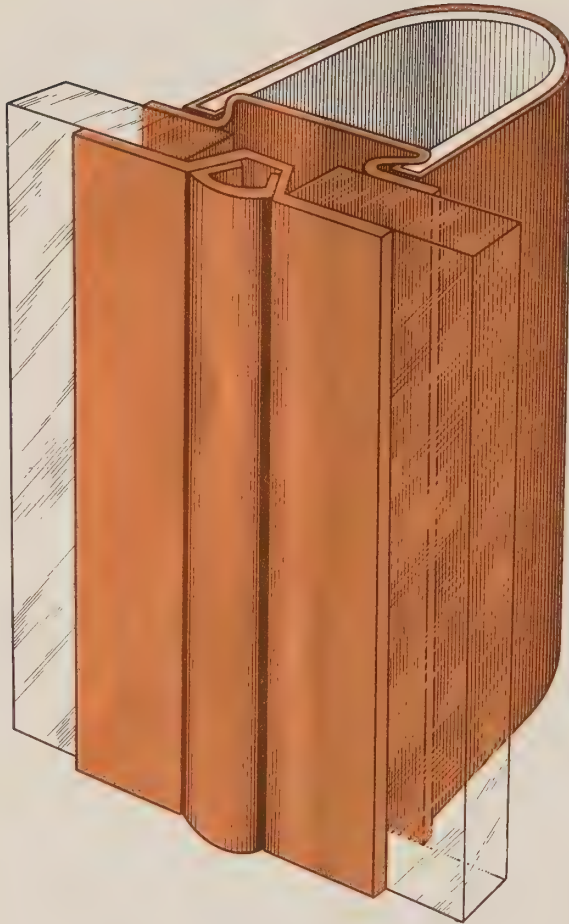
The use of the U-shaped steel reinforcement insures ample horizontal as well as lateral strength and by the particular attachment of the steel moulding (to the spring and not in direct contact with glass), the glass may yield back and forth sufficiently to take up shocks and vibrations.



Division Bar No. 14A. Full Size Detail

Kawneer

STORE FRONTS



Division Bar No. 21B

Also note the large grip on the glass. This grip is of the continuous, spring, friction type, characteristic of KAWNEER only and is far superior to the intermittent, line grip. KAWNEER Bars and Sash afford the same grip between the bolts as is found at the bolts—the tension is equally distributed along the edges of the glass.

The spring on Division Bar No. 21B is of No. 20 B. & S. gauge metal.

This bar is for use with glass up to 108" x 108". Do not use No. 21B over 108" in length.

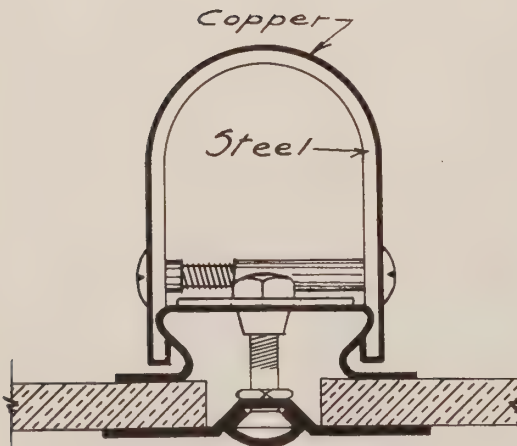
Division Bar No. 21C

This Bar is identical to Division Bar No. 21B, except that the steel reinforcing U is .125" in thickness, (.094" steel is used in No. 21B), and is somewhat larger in depth, giving greater lateral strength.

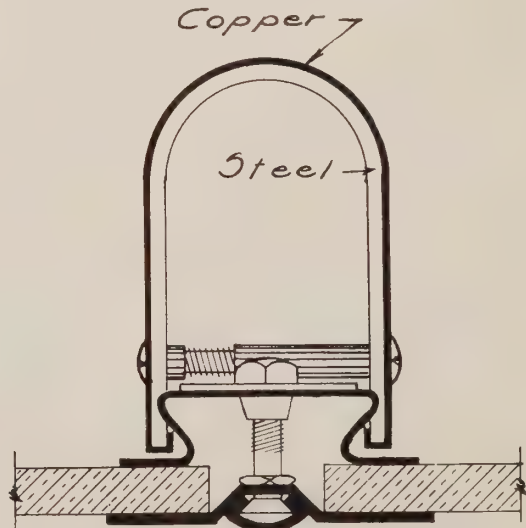
The spring of this Bar is No. 20 B. & S. gauge metal.

Division Bar No. 21C is for use with glass over 108" x 108".

Upon all three of these Division Bars, a rigid attachment is assured by anchor brackets which are fastened at top and bottom.

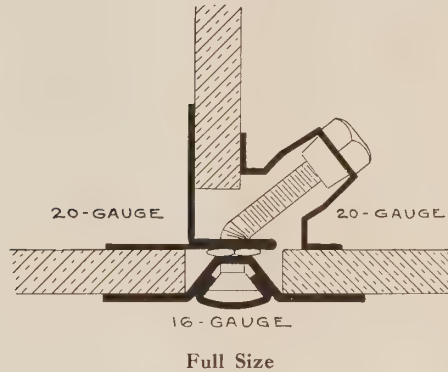


Division Bar No. 21B. Full Size Detail.



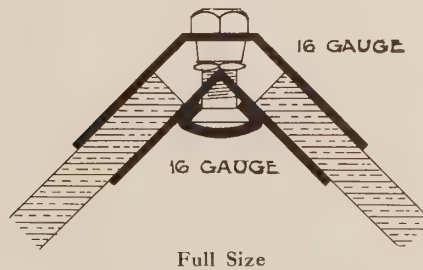
Division Bar No. 21C. Full Size Detail

Three-Way Bar No 8.



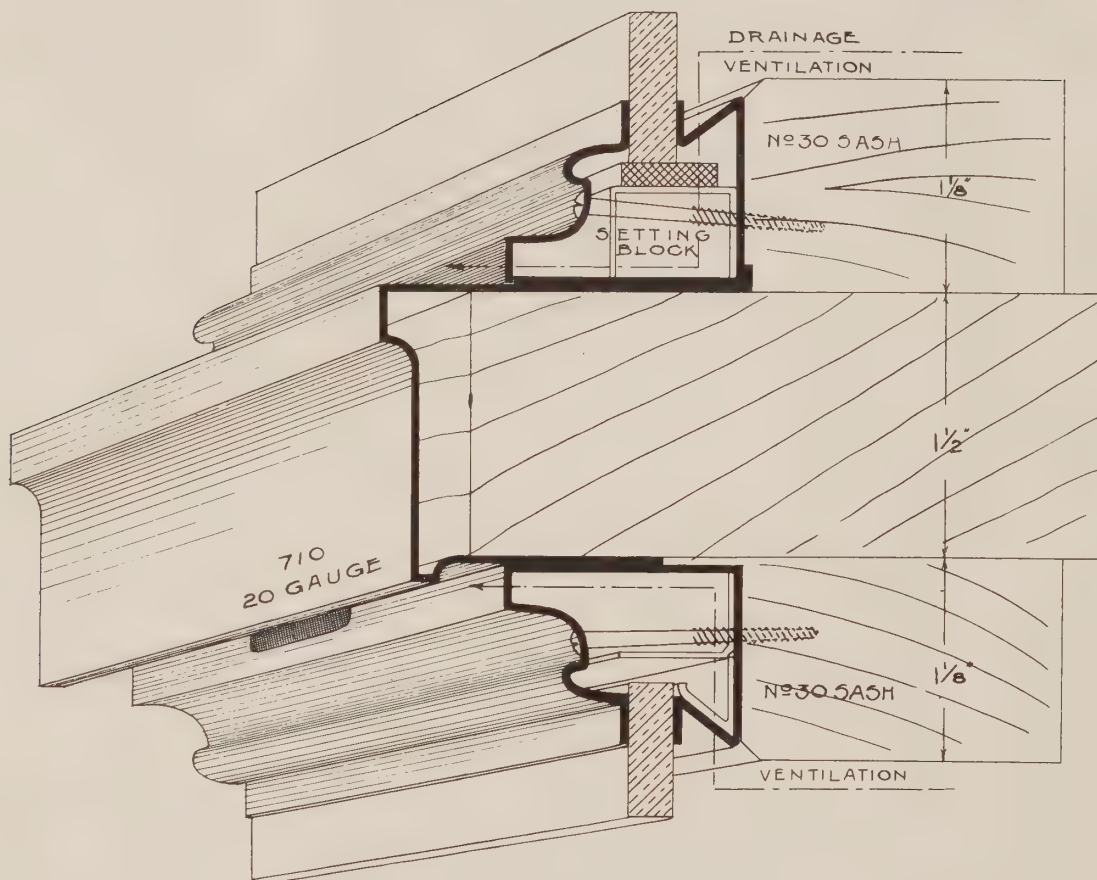
THREE-WAY Bar No. 8 is a combination of a corner and division bar: In some cases transom glass is used not only directly across the vestibule, but, as well, back into the returns. In such a case a Three-way Bar is necessary, and it has been so constructed as to follow the same general design used on all Kawneer bars—spring friction grip, narrow construction — all-metal — no rust, rot or warp.

Reverse Angle Corner Bar No. 9



Reverse Angle Corner Bar No. 9 is required wherever a store front is so constructed that if a regular corner bar were used the face of the bar would be inside the window. The design is very similar to Corner Bar No. 5. No. 16 B. & S. gauge metal is used throughout Bar No. 9.

Transom Bar No. 26



Transom Bar No. 26. Full Size

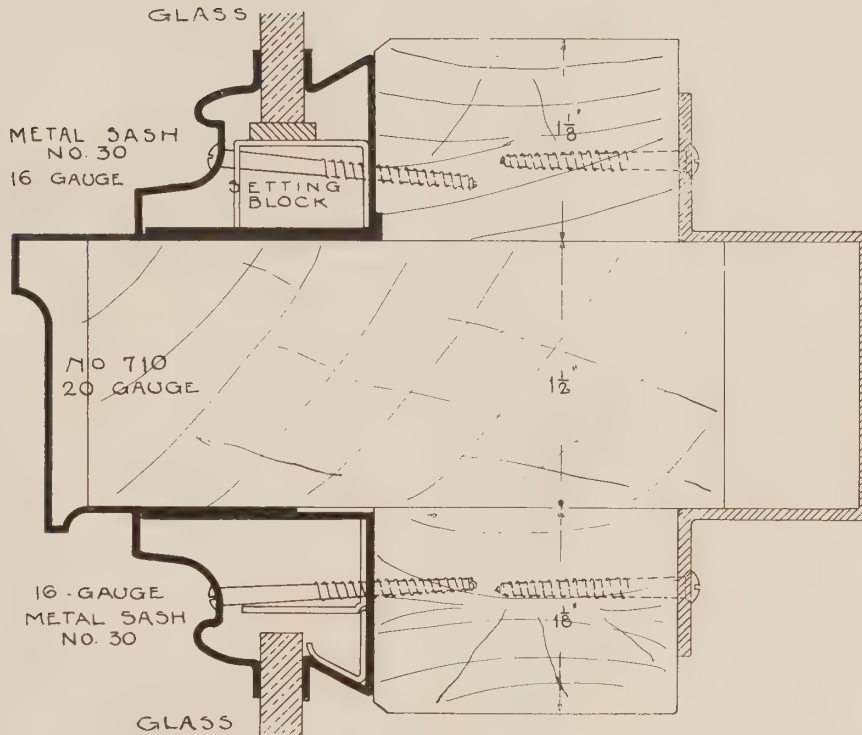
TRANSOM Bar No. 26 is furnished complete as detailed, wood core, No. 710 outside metal covering, and two No. 30 metal sash; insuring absolute freedom from leakages.

See page 19 for detail of reinforced transom bar. These are necessary only for spans of 14 feet or over that have no reinforcement whatever (either by means of return transom bars, ceiling or columns).

All transom bars are supported by 7/16" iron rods, threaded at both ends (right and left-hand thread) and attached to the head jamb and transom bars.

Twenty-two feet is the longest length in which this bar can be shipped in one piece by freight, although bars twenty-five feet in length can be shipped by express.

Reinforced Transom Bar

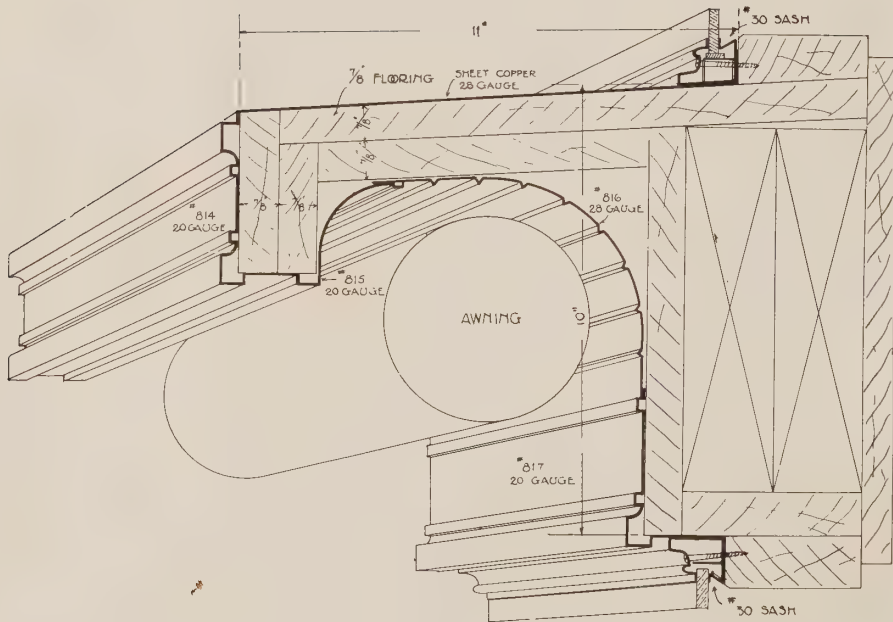


Full Size Detail, Showing Method of Reinforcing Transom Bar No. 26
by Means of a Steel Channel

IF, for spans of fourteen feet or over, there is no reinforcement whatever, either by means of columns, ceiling or return transom bars, reinforced transom bars become necessary.

Transom Bar No. 26, reinforced, is of narrow lines and strong steel reinforcement. It is recommended for use under the above conditions and insures safety to glass, freedom from leakages and a handsome appearance.

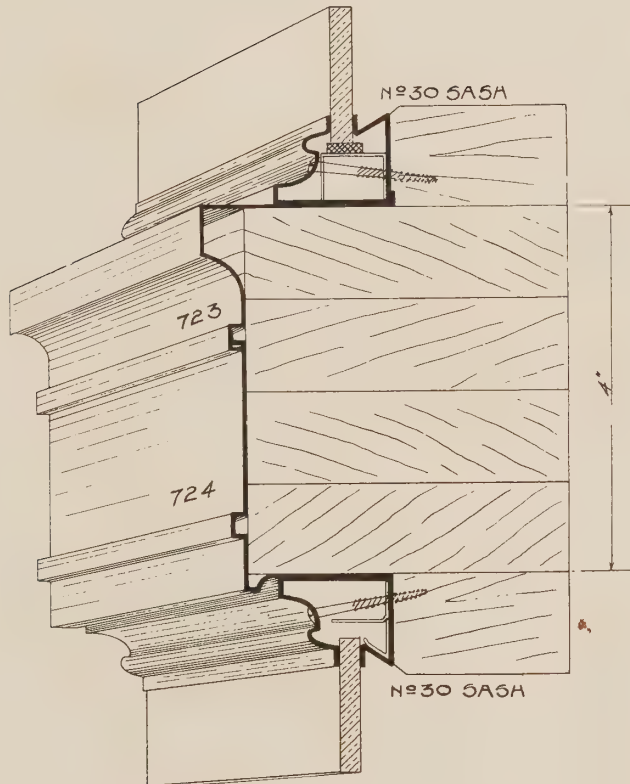
Awning Transom Bar



Quarter Size Detail of Heavy Transom Bar No. 5864

TRANSOM Bar No. 5864 was designed for use with roll awning. The principle employed to protect the awning when rolled up will be seen at a glance. This makes a clean-cut, practical and strong bar and especially adapted for its purpose. We furnish metal only for this bar.

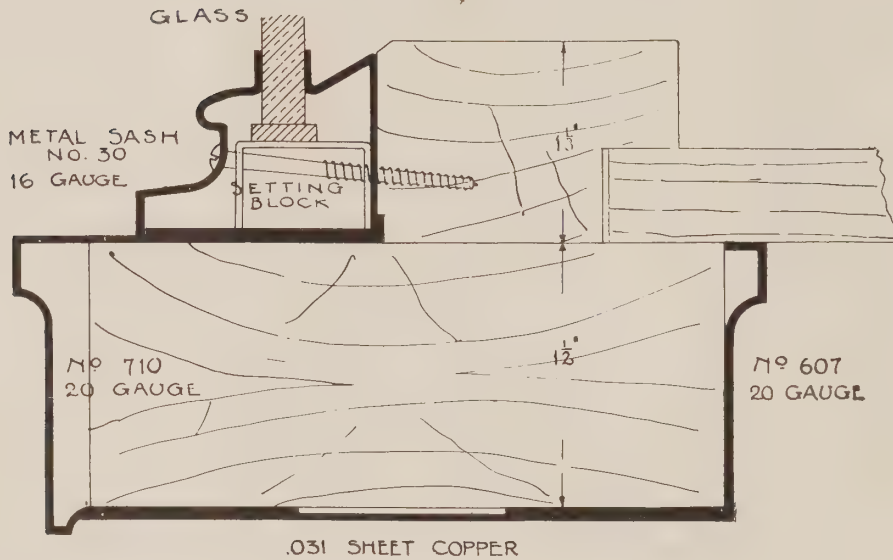
Heavy Transom Bar



Transom Bar No. 5392. Half Size Detail

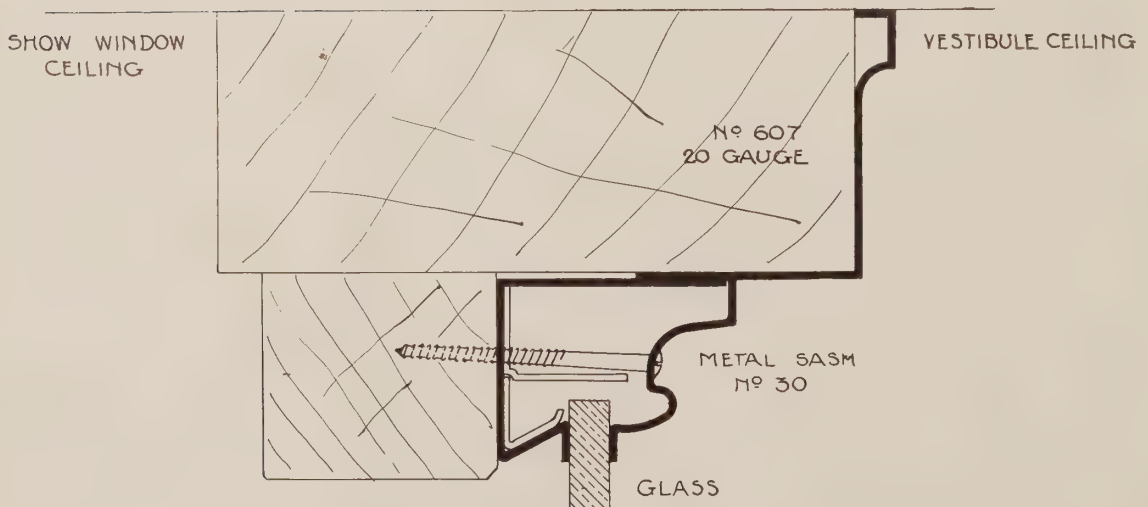
TRANSOM Bar No. 5392 can be varied in width from $2\frac{1}{8}$ inches to 4 inches. The lip of moulding No. 724 is cut down when reduction is desired. This bar can be furnished with or without wood core.

Transom Bar Over Entrance



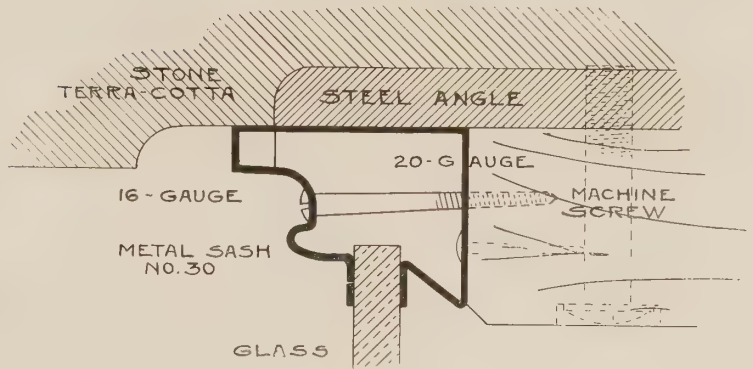
Full Size Detail of Transom Bar No. 26 over Entrance
Showing Method of Finishing

Vestibule Head Jamb



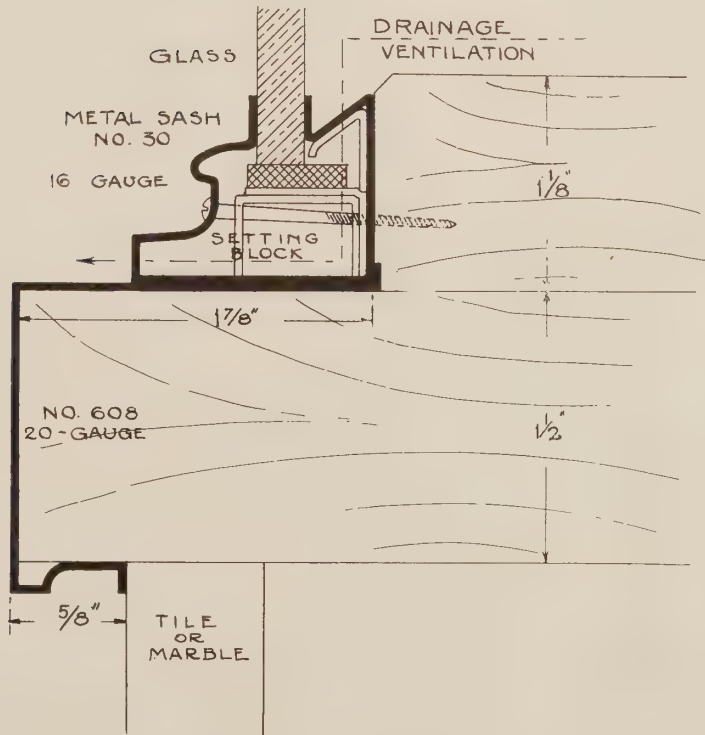
Full Size Detail of Head Jamb in Vestibule. This Construction is Used
when Vestibule is Ceiled Over at Line of Transom Bar

Head Jamb Construction



Full Size Detail of Head Jamb Construction, Showing Method of Attaching Metal Sash No. 30 Directly Against an I-Beam

Sill Construction



Full Size Detail of Sill Construction, Using Sash No. 30 and Moulding No. 608



San Francisco, Calif.



Kaw
STORE



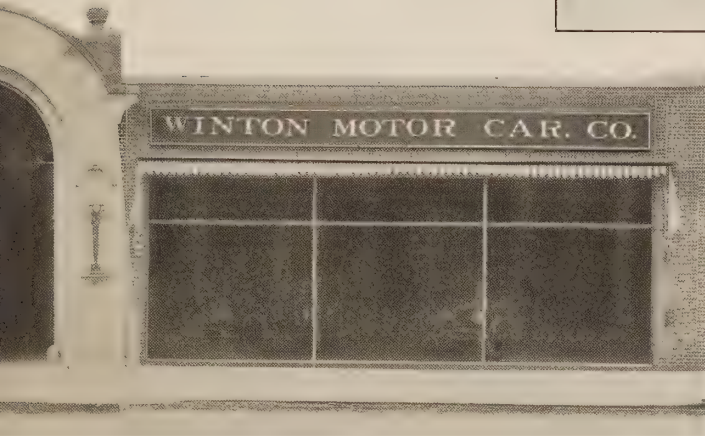
Pittsburgh, Pa.

“It Stays

neer
FRONTS



Detroit, Mich.

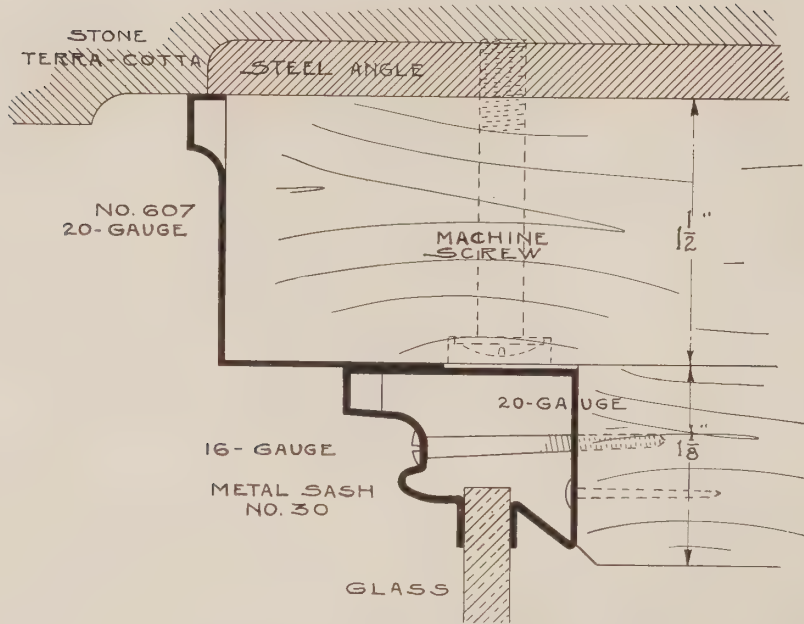


nd Pays”



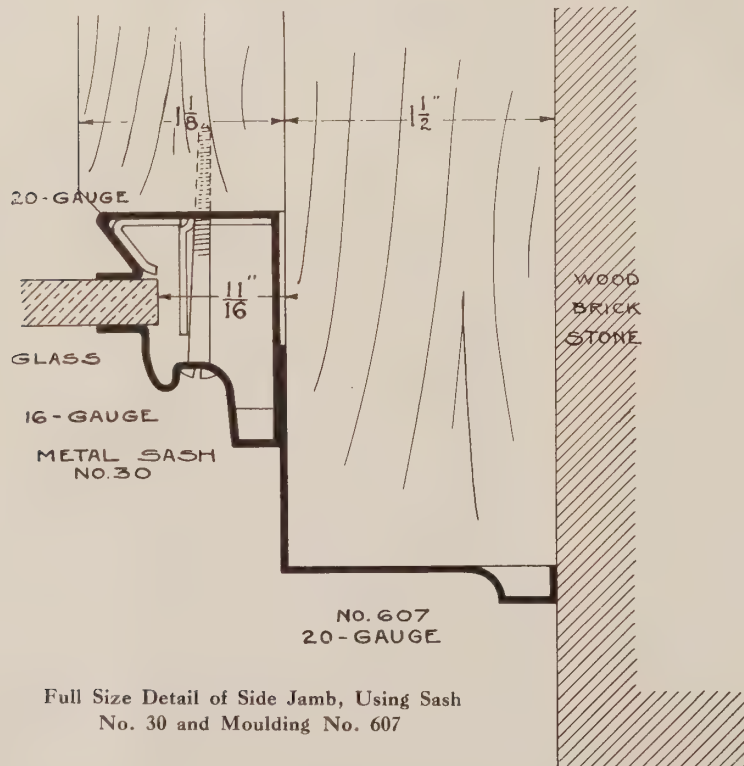
Indianapolis, Ind.

Head Jamb Construction



Full Size Detail of Head Jamb, Using Sash No. 30 and Moulding No. 607

Side Jamb Construction



Full Size Detail of Side Jamb, Using Sash
No. 30 and Moulding No. 607

Kawneer

STORE FRONTS



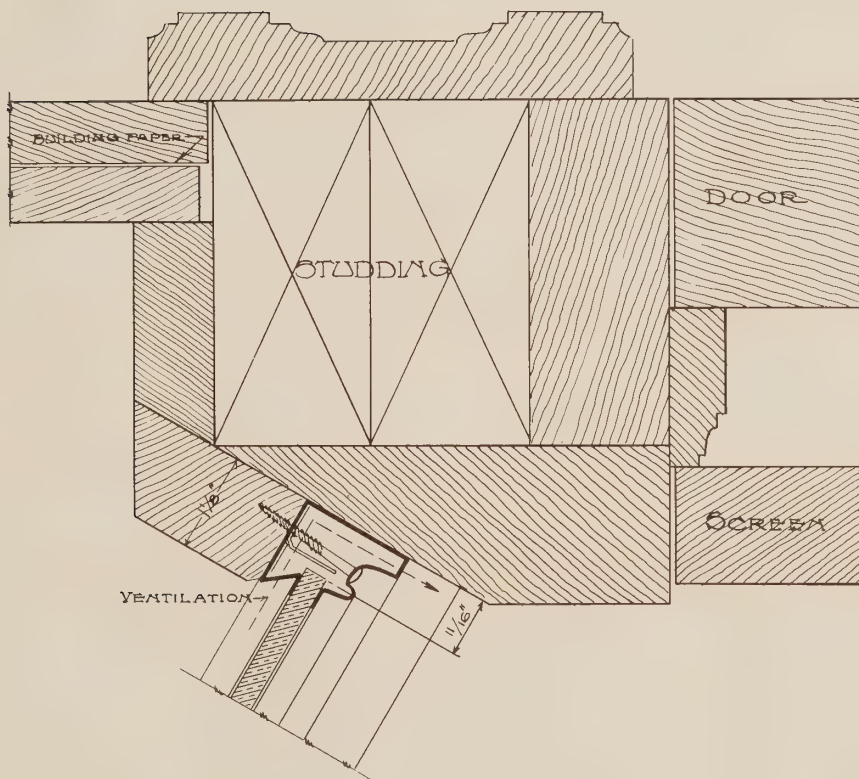
Portland, Oregon

Kawneer

STORE FRONTS

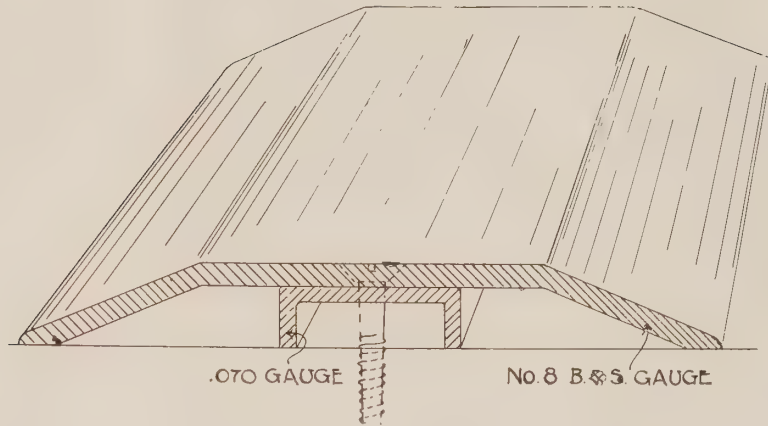


Door Jamb Construction



Detail of Door Jamb, Half Size

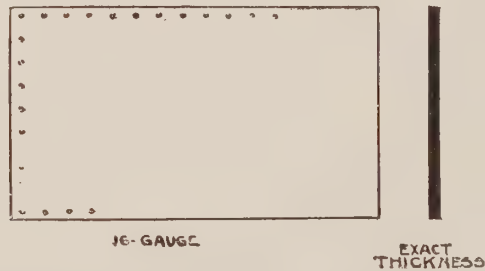
Brass Threshold



Full Size Detail of Threshold. No. 801

THE face of this threshold is made of No. 8 B. & S. gauge brass, reinforced by short sections of a .070 steel channel. Being of brass it will not rot, rust or warp and the metal used insures a long-lived threshold. It can be furnished in any length in brass; no other metal is used.

Kickplates



Kickplates are furnished in No. 16 B. & S. gauge copper or brass, with square edges, screw holes drilled, and highly polished. Brass screws are also supplied. Oxidized finishes upon copper can also be furnished.

The following sizes are regularly carried in stock:

Widths—10", 12", 14", 16", 18".

Lengths of 29", 35", 41" and 47" can be furnished in the above widths.

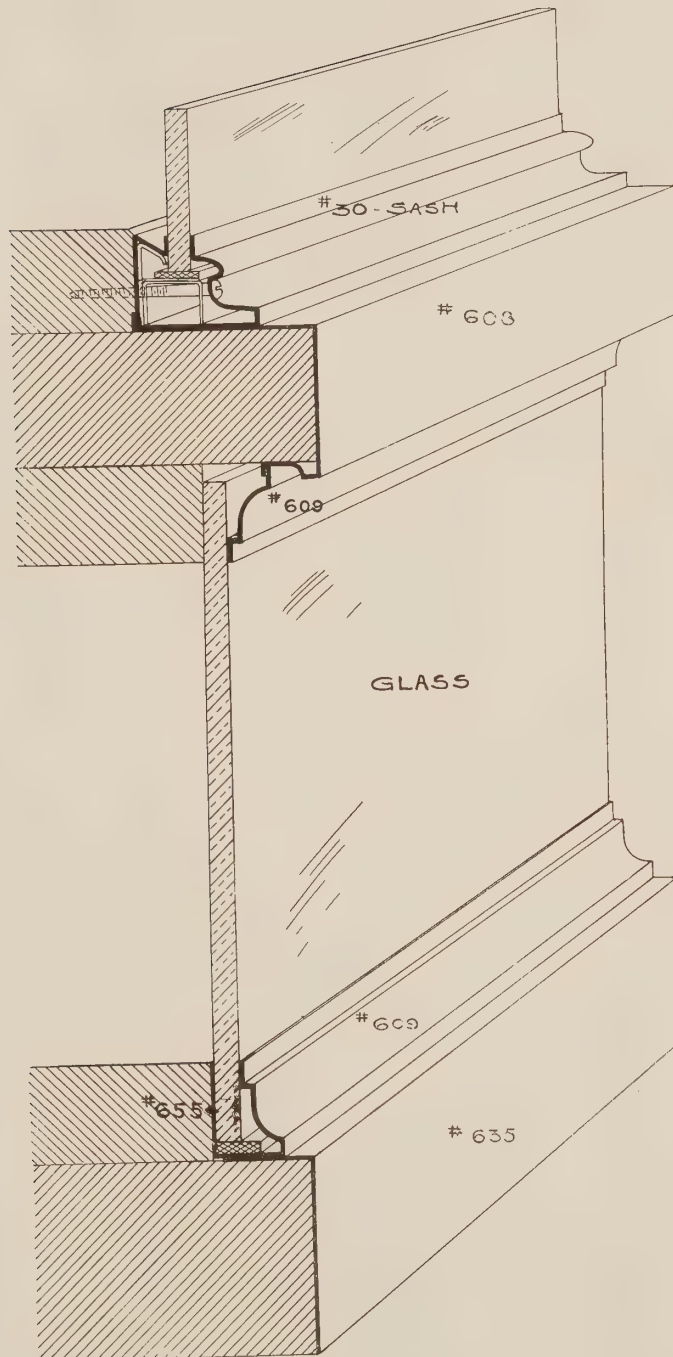
Any other size can be supplied upon request.

All Kawneer material (with the exception of thresholds) is manufactured in the following finishes: Burnished Copper, Statuary Copper, Old or Antique Copper, Spotted Oxidized Copper, Gun Metal Copper, Sand Blasted Old Copper, Burnished Brass, Satin Brass, Brushed Brass, Antique Brass, Burnished Bronze, Brushed Bronze, Satin Bronze, Statuary Bronze and Aluminum.

These finishes are made upon solid Copper, Brass, Bronze or Aluminum in every instance.

Kawneer

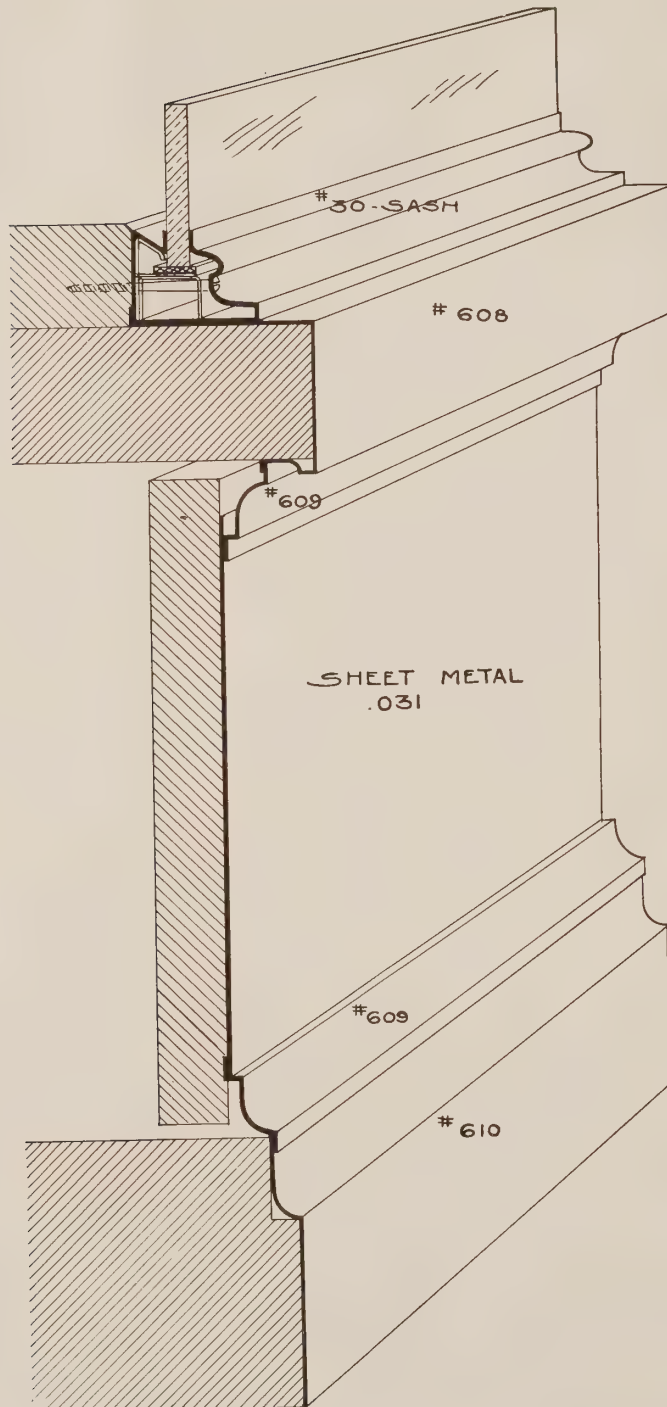
STORE FRONTS



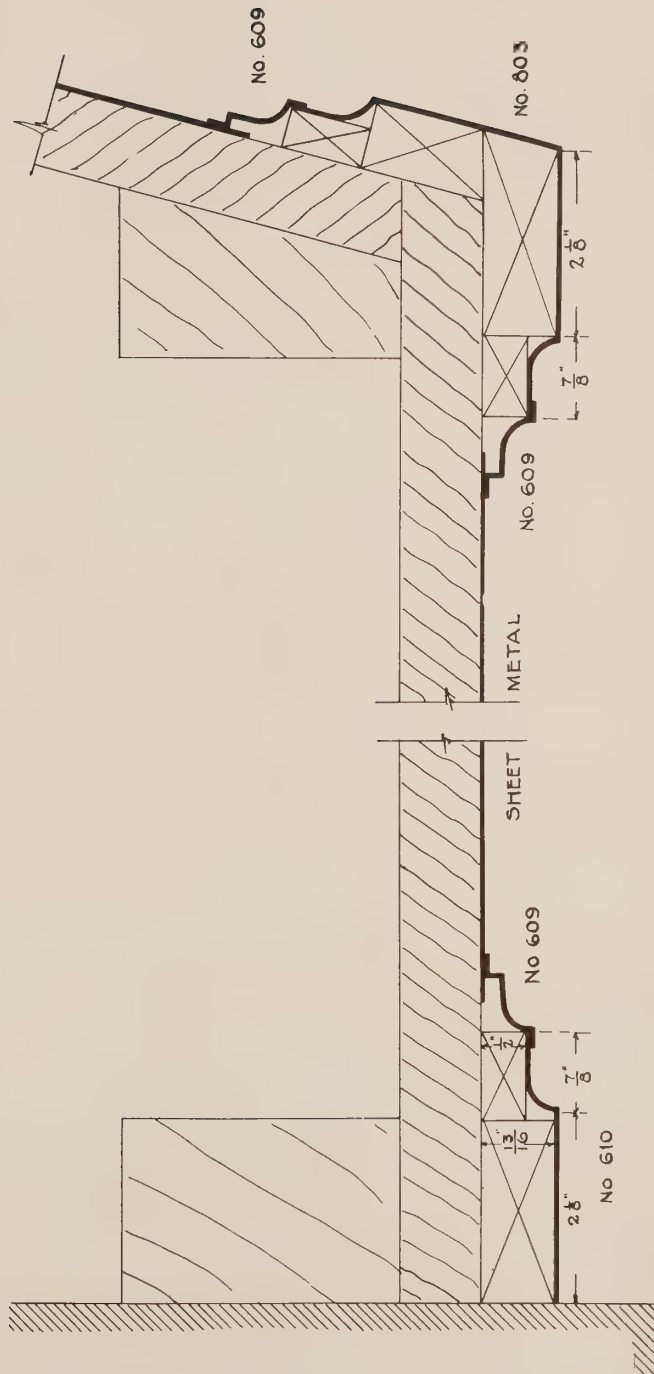
Half Size Detail of Bulkhead Construction No. A3047

Kawneer

STORE FRONTS



Half Size Detail of Bulkhead Construction No. A3051

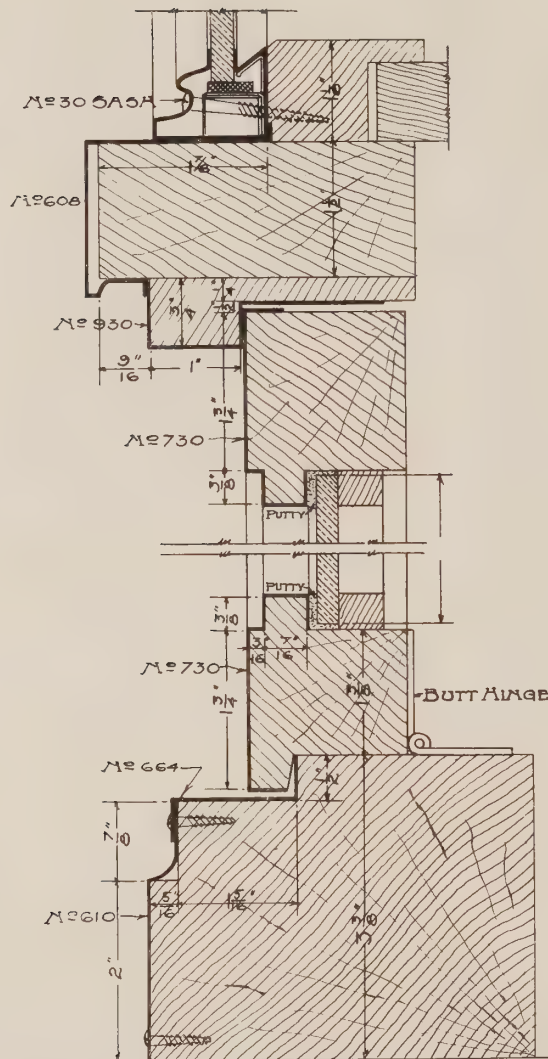


Plan Showing Bulkhead Mullion Construction No. 3051

See page 32 for elevation detail

Kawneer

STORE FRONTS



Half Size Detail of Bulkhead Construction No. A3073
with Swinging Sash

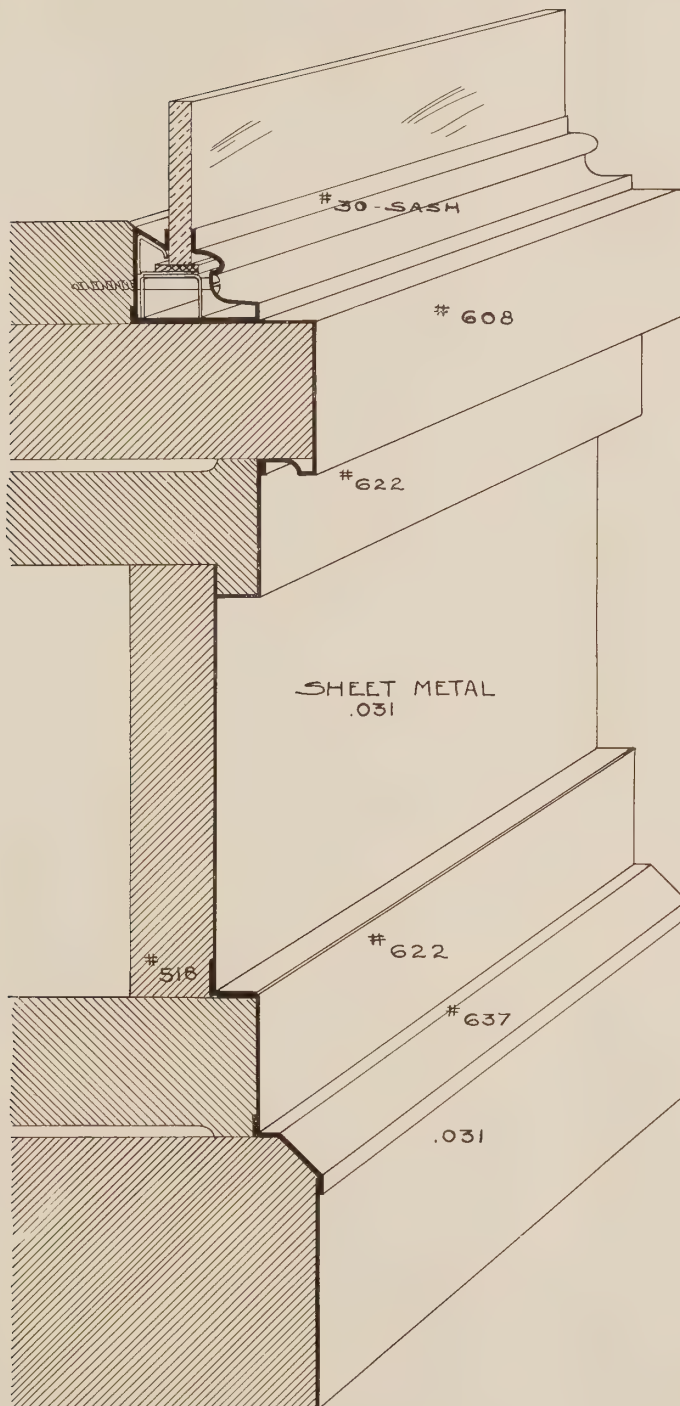
THE bulkhead design shown above fills the demand for a construction entirely covered with metal, and yet so made as to provide hinged sash therein. This sash, with metal covering attached firmly at the factory, can be furnished in conjunction with the metal mouldings covering the stationary parts of this bulkhead.

When it is desired that we furnish this sash complete, do not fail to give the exact size of the opening which it is to fill.

Such a construction as shown above — combining hinged windows with bulkhead entirely covered with metal — is wholly free from rotting or any painting cost, and, as well, gives complete ventilation and light to the basement. Division Bar No. 14A can be readily used for mullions if it is desired to make the glass widths large. No metal of less than No. 20 B. & S. gauge is used in this bulkhead.

Kawneer

STORE FRONTS



Half Size Detail of Bulkhead Construction No. A3049

Garage Fronts



DETROIT, Michigan, is generally acceded to be the "Automobile City" of the United States, and if anything new appears in connection with motor cars or their distribution, its origin, in a great percentage of cases, can be traced to that city.

When in Detroit, there is one thing that strikes you very forcibly — the Auto Garages and Salesrooms. You will see rooms and stores of all kinds but those that "stand out" from all others are provided with Kawneer Fronts. Beauty of design of the Fronts is most important because the surroundings of the exhibition car have a great bearing upon its appearance. That is the reason Kawneer Store Fronts have met with the approval of Architects in designing up-to-date garages and sales rooms, not only in Detroit, but throughout the country.

Frosting of Show Windows

SHOW window advertising is of such value that any method or means of development is most interesting to the aggressive merchant, and indirectly to the Architect and Contractor. Every hour the glass of show windows is covered with frost it means an absolute money loss to the merchant.

The end of each year finds thousands of dollars spent in altering old Store Fronts in an effort to prevent the formation of frost on show windows and in many, many instances without success. It is erroneous to think that it only requires holes bored at the top and bottom of the glass frame.

Theoretically, cool, dry air circulating in the show window will reduce the humidity and prevent the moisture from condensing on the glass surface and forming frost.

In general the above theory is true, but several conditions enter which must be observed before the results are successful.

(FIRST) The windows must be enclosed from the store proper and this enclosure must be made air tight (absolutely). The floor, ceiling and partition should be double, with paper between. If glass is used in this partition, it should be puttied and the door entering should be constructed similar to an icebox door, have two rabbets with rubber weather strips around.

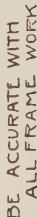
(SECOND) The air from the outside must enter the window near the edges and at the surface of the glass, so that the circulation is greatest at the glass surface.

(THIRD) A sufficient amount of dry air must be admitted so that the moisture is rapidly absorbed by the air entering windows.

KAWNEER is designed to cover the second and third articles, but these are of small value as frost preventatives unless Architects and Owners follow our suggestion in section one. In addition to this means of preventing frost, KAWNEER enables you to make this sash dust-tight in Summer. It is simply a V-shaped slide built in the gutter of the sash. See page 8.

The fact that air in a show window is cold does not necessarily mean that it is dry. We find during Fall weather when a show window is filled with cold, damp air (above freezing) and a sudden fall of temperature strikes the glass, the moist air within the show window will frost before the outside air has time to enter and by circulation take up this moisture. But by continuing cold the frost will disappear and the windows remain clear.

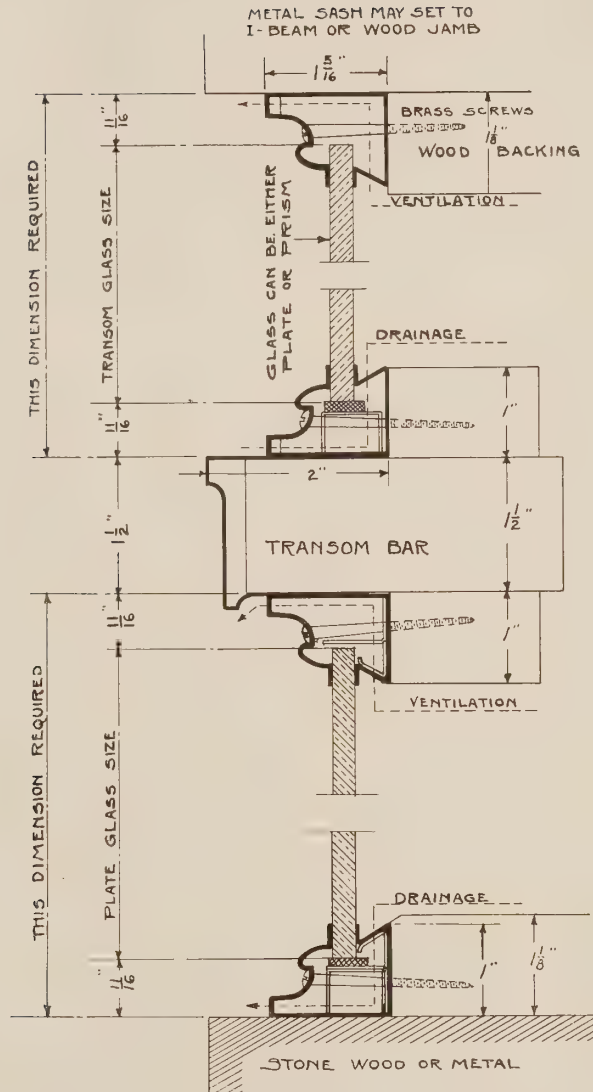
STORE FRONTS



Plan of Store Window, Showing Relation of Glass Sizes to Length of Kawneer Metal Sash No. 30 Required

Kawneer

STORE FRONTS



Vertical Section of Store Front. Half Size Detail,
Showing Relation of Glass Sizes to Length of
Kawneer Metal Sash No. 30 Required

Metals

THE sheet material used in the general construction of Kawneer bars, sash and mouldings is cold rolled and drawn. This gives a surface that is absolutely true and every section uniform. We use no plating, all our materials being solid metal of the respective kinds as listed. We can therefore guarantee quality of the very highest on all our regular or special work.

Ultimate Tensile Strength of Sheet Metals Used

Aluminum .	30,000 pounds per square inch	Copper	30,000 pounds per square inch
Brass	45,000 pounds per square inch	Steel	55,000 pounds per square inch
Bronze	36,000 pounds per square inch		

Melting Point

Aluminum	1157 degree Fah.	Copper	1929 degree Fah.
Brass	1750 degree Fah.	Steel	2400 degree Fah.
Bronze	1692 degree Fah.		

Properties of Metals

Aluminum=2 per cent Alloy.	Steel=8 per cent Carbon.
Brass=62 per cent Copper, 38 per cent Zinc.	Copper=Lake.
Bronze=90 per cent Copper, 10 per cent Tin.	

Lighting

Lighting of a display window, show-case, etc., should always be from above and the lights so placed that they are not visible to the passerby.

Formerly some lighting was placed in vertical rows, but today this is never done in up-to-date windows or show-cases. Such lights are glaring to the eyes and greatly detract from, rather than add to the richness of the display.

GAS:—One ordinary fish-tail burner will light about 6 ft. x 6 ft. floor space.

One Welsbach burner will light about 15 ft. x 15 ft. floor area. One Welsbach burner will consume about five feet of gas per hour. Inverted Welsbach consumes about three feet of gas per hour.

Ordinary gas tips will consume from 6 to 12 feet per hour, depending upon the pressure.

ELECTRIC:—One ordinary 16 candle power carbon lamp will light about 7 ft. x 7 ft. floor area, but stores should have a much more intense lighting, generally three to five times this amount, while show windows should have five to eight times as much.

The above, however, depends upon the location of the lights, color of the walls, decorations, etc.

The ordinary electric light is objectionable for store windows, and the Tungsten electric globe is rapidly supplanting the carbon filament lamp. With this light all colors are seen, as in daylight, a great advantage in displaying goods.

Glass—Kinds, Quality, Manufacture, Etc.

ORDINARY window and plate glass are known as blown glass. Plates are often cast as large as 20 ft. x 12 ft.

Thickness of Glass

Rough cast $\frac{1}{2}$ in. to $1\frac{1}{2}$ in. thick.	Sheet Prism $\frac{1}{4}$ in. thick.
Polished plate prism $\frac{3}{8}$ in. thick.	Wire glass $\frac{1}{8}$ to $\frac{1}{4}$ in. thick.
Polished plate $\frac{3}{16}$ in. to $\frac{3}{8}$ in. thick.	Ribbed $\frac{1}{8}$ in. thick.

Weight of plate glass is usually estimated at $3\frac{1}{2}$ pounds per superficial foot.

Tensile strength of glass ranges from 4,000 to 6,000 lbs. per sq. inch.

Crushing strength ranges from 13,000 to 20,000 lbs. per sq. inch.

Wind Pressure for Plate Glass

Architects and owners frequently overlook the fact that the size of plates should be proportioned to the wind pressure they must sustain; *i. e.*, as the glass increases in size its strength diminishes very rapidly, because the glass thickness is not increased in proportion to the area of the glass.

The following table gives results of experiments made by us and shows the relative strength of plate glass when subjected to wind.

The second table gives the government test on wind pressure according to various velocities.

Comparing these tables, one can see within what limits glass is considered safe.

Plates higher than nine feet should be supported by an iron brace having a rubber wheel on the end in contact with the glass.

Copyrighted 1908. Kawneer Manufacturing Company

Plate Glass Sizes	Safe Wind Pressure in Lbs. per Sq. Ft.	Plate Glass Sizes	Safe Wind Pressure in Lbs. per Sq. Ft.
24 in. x 24 in.	244 lbs.	108 in. x 108 in.	21 lbs.
36 in. x 36 in.	192 lbs.	120 in. x 120 in.	16 lbs.
48 in. x 48 in.	144 lbs.	132 in. x 132 in.	11 lbs.
60 in. x 60 in.	90 lbs.	144 in. x 144 in.	8 lbs.
72 in. x 72 in.	54 lbs.	156 in. x 156 in.	6 lbs.
84 in. x 84 in.	36 lbs.	168 in. x 168 in.	5 lbs.
96 in. x 96 in.	26 lbs.	180 in. x 180 in.	4 lbs.

Wind Pressure per Square Foot, According to Government Report

Velocity	Pound Pressure per Sq. Ft.	Miles per Hour
Brisk gale	$1\frac{1}{4}$	16
Very brisk	3	25
High wind	6	35
High storm	12	50
Great storm	21	65
Hurricane	32	80
Violent hurricane	50	100

Kawneer

STORE FRONTS



Helsingfors, Russia

A GREAT many foreign Architects and Contractors are eager to learn of the wonderful progression being made by building material manufacturers in the United States and here is shown a partial view of a recently constructed business building in Helsingfors, Russia, using KAWNEER STORE FRONTS.

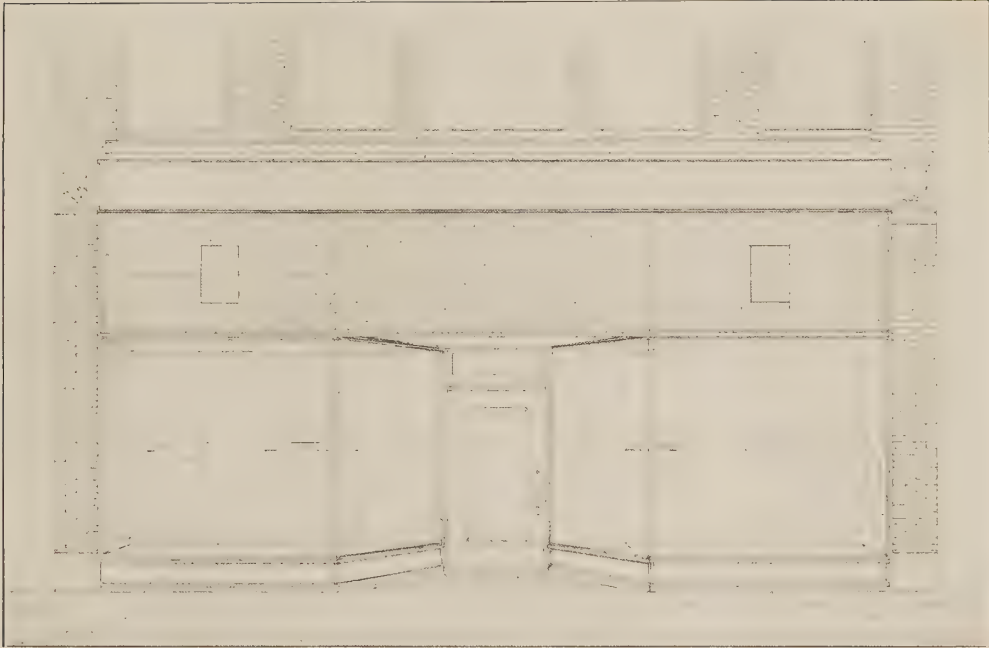
KAWNEER was not used, however, until an exhaustive investigation had been made of the various kinds of construction. KAWNEER was decided upon and used because of its simplicity, practicability, efficiency and ease of installation.

The Contractor of this building has used KAWNEER in several other buildings and each one bears out our claims — each one has “made good.”

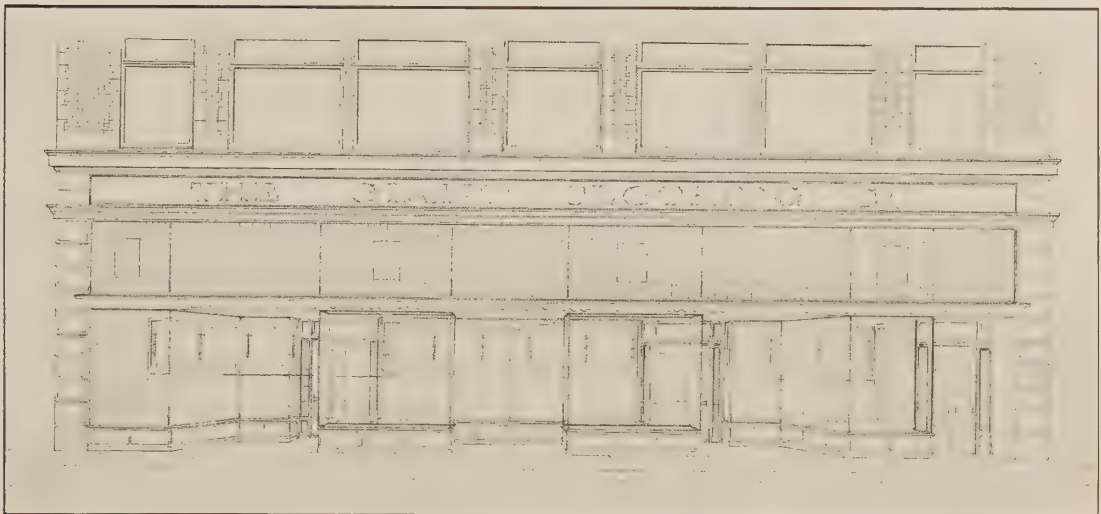
You will notice in the above photograph the window display of a well-known American industry.

Kawneer

STORE FRONTS



Kawneer material is equally adaptable to the simplest
and the most complicated styles of Store Fronts



Instructions for Ordering

WHEN ordering, in every case possible, send us blue prints showing a dimensioned plan and elevation of the front. To accurately cut our material we cannot get sizes by scaling a blue print; we have to allow from one to three inches for the shrinkage of the blue print. When a print cannot be sent, send a sketch showing elevation and plan, and indicate the sizes on same, otherwise we cannot mitre our sash properly. *Do not fail to tell us whether the sizes given are glass sizes or sizes of openings.*

The two sketches on pages 38 and 39 showing a plan and vertical section of our material used in a store front indicate the sizes of our sash bars in relation to glass sizes.

BE SURE TO EITHER STATE THE ANGLE OF THE GLASS ON ALL CORNERS OR HAVE SAME SHOWN ON SKETCH. THE ANGLE "A" ON PAGE 38 IS THE ONE REQUIRED.

When requesting prices on any special work or when ordering give all information that relates in any way to the store front; don't be afraid of giving too much. In this way our shipment to you or the information you request will not be delayed while we are writing you for more definite particulars.

GIVE SHIPPING DIRECTIONS STATING WHETHER ORDER IS TO BE SHIPPED BY EXPRESS OR FREIGHT. UNLESS SUCH DIRECTIONS ARE GIVEN ALL ORDERS WILL BE SENT BY EXPRESS.

- No. 30 sash weighs packed approximately 1 lb. per foot.
- No. 50 sash weighs packed approximately $1\frac{3}{4}$ lbs. per foot.
- No. 60 sash weighs packed approximately $1\frac{1}{4}$ lbs. per foot.
- No. 100 sash weighs packed approximately $1\frac{3}{4}$ lbs. per foot.
- No. 130 sash weighs packed approximately $1\frac{1}{4}$ lbs. per foot.
- No. 5 corner bar weighs packed approximately 1 lb. per foot.
- No. 10 corner bar weighs packed approximately $1\frac{1}{4}$ lbs. per foot.
- No. 14A corner bar weighs packed approximately 1 lb. per foot.
- No. 21B corner bar weighs packed approximately $2\frac{1}{2}$ lbs. per foot.
- No. 21C corner bar weighs packed approximately 3 lbs. per foot.
- No. 26 transom bar weighs packed approximately $4\frac{1}{2}$ lbs. per foot.

ALL ORDERS WILL BE FILLED WITH THE BURNISHED COPPER FINISH WHEN NO OTHER IS SPECIFIED IN THE ORDER.

Kawneer Products

A SIDE from building the original, solid, all-metal Store Front Construction, we manufacture cold rolled and drawn hollow metal mouldings in copper, brass, bronze and steel. Architectural mouldings of this type and kind are constantly becoming more popular in the construction of buildings as well as in metal furniture, automobiles, railway coaches, factory and casement windows and constructions of that nature.

Cold rolled and drawn mouldings are true in every respect. All curvatures and angles are uniform and exact — true to design; the surface of these mouldings are smooth and finished — no rough spots or pits such as are found on mouldings produced by other processes.

You will readily appreciate the wonderful advantages of such mouldings.

We have many standard shapes in stock and also are able to furnish you with mouldings of special shapes on very short notice. Our facilities for handling this are unsurpassed and we give this class of work the same prompt and careful attention that has always been given KAWNEER STORE FRONTS. Realizing, as we do, that such material as this should be manufactured and shipped promptly and with care, we have equipped ourselves accordingly.

On any cold rolled and drawn mouldings that you may be interested in, we would be very glad to figure with you — in any event, we would like to have you learn of the wonderful advantages of mouldings of this nature.

Kawneer

STORE FRONTS



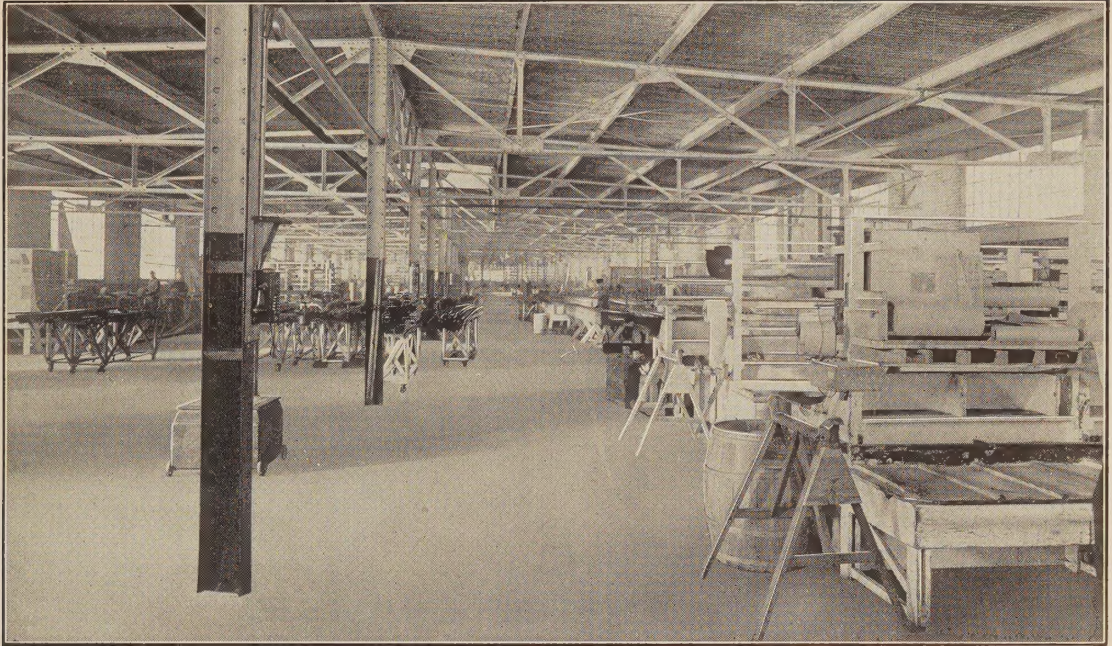
Recently Constructed Factory Addition Before Occupancy, Niles, Michigan



Partial View of the General Offices, Niles, Michigan

Kawneer

STORE FRONTS



Partial View of Factory Building No. 2, Niles, Michigan



View in Factory Showing a Group of Presses, Niles, Michigan

